

USAWC STRATEGY RESEARCH PROJECT

**Leverage Industry to Enhance DOD Logistics**

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The views expressed in this academic research paper are those of the author and do not necessarily reflect the official policy or position of the U.S. Government, the Department of Defense, or any of its agencies.

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## ABSTRACT

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To enhance DOD logistics and improve end-to-end distribution, the Department of Defense should adopt commercial business practices. This strategic research paper (SRP) analyzes several commercial business practices that enhance DOD logistics concepts. Commercial business practices analyzed in this paper include the employment of technology enablers, partnering and collaboration, best practices, prime vendors, supply chain management, future logistics enterprise, end-to-end distribution, and buying services and not products.



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## PREFACE

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## LEVERAGE INDUSTRY TO ENHANCE DOD LOGISTICS

Defense Logistics Agency exists to ensure America's Warfighters are never logistically unprepared. Our commitment to deliver the right item, to the right place, at the right price, every time with the best value solutions for our customers requires continual logistics transformation—leveraging the best commercial and DOD business practices, capitalizing on information technology and maintaining warfighter knowledge, focus, and teamwork. In partnerships with the Military Services, warfighting Combatant Commanders and industry, we will succeed.<sup>1</sup>

—Lieutenant General Henry Glisson  
Director, Defense Logistics Agency

The Department of Defense (DOD) is asked to do more with less. Since the 1990s, DOD has experienced a reduction in the defense budget and a downsizing of the military force. If DOD intends to stay abreast of 21<sup>st</sup> Century innovations, it should take advantage of the many technological benefits that exist in commercial industry. DOD logisticians should adopt commercial business practices to help the Armed Forces maintain their competitive edge in the rapidly changing global security arena.

The Revolution in Military Logistics was the impetus for change and was the driving force behind transforming, modernizing, and streamlining DOD logistics. The DOD logistics community is challenged to determine how to provide streamlined support to the warfighters. This challenge includes effectively using all resources available to meet the needs of warfighters. This must be accomplished while operating within policies that govern acquisition and procurement activities. This strategic research paper (SRP) analyzes commercial business practices that enhance DOD logistics concepts. Commercial business practices analyzed in this paper include the employment of technology enablers, partnering and collaboration, best practices, prime vendors, supply chain management, future logistics enterprise, end-to-end distribution, and buying services and not products.

Our challenge is to maintain superior technology and industrial capabilities at an affordable price. To meet this challenge, we are to rely on a technology and an industrial base sustained by commercial demand, but capable of meeting defense needs. By using commercial products and services, we benefit from the cost efficiencies and technological innovations available from a much larger commercial market. We also capitalize on industry's investments in research and development and more rapid pace of product improvements.<sup>2</sup>

—The Undersecretary of Defense for Acquisition and Technology

## **TECHNOLOGY**

Technology is rapidly and constantly being integrated into all areas of the workplace environment. It is being integrated into organizations to support their fundamental requirements of processing, handling, and transacting business opportunities between and amongst themselves. Industry considers failure to employ technology enablers as missed opportunities. Missed opportunities can cause an organization to become stagnant and lose its dominance in a market. It can also spell the demise of the organization.

The DOD can improve logistics concepts by taking advantage of technology and innovative network centric concepts. Information technology serves as the center for transmitting data to and from various systems. Information technology and automated systems create efficient and effective means of managing assets in the logistics pipeline. To realize the potential of information technology, DOD systems should be web-based and linked to shared databases.

## **INFORMATION TECHNOLOGY**

It is critically important to understand how to leverage information technology to enable an organization to better perform its functions. It is important to address the requirements of customers in this fast-paced, evolving business environment in order to produce desired results within the time required to achieve the results. Emerging information technologies facilitate logistical activities and may enable networking multinational highly distributed joint forces to ensure that these forces have better situational awareness about adversaries and friendly forces far better and quicker than in the past.

There are many benefits to leveraging information technology. It can help the DOD create paperless logistics systems by making them available through the internet or via CD-ROM and replacing traditional methods of "just-in-case" logistics with modern business approaches of "just-in-time" logistics.<sup>3</sup> However, there are shortfalls to relying on information technology to meet the logistical needs of the DOD. Organizations might become too dependent on it. Information technology can automate processes and complete them very fast. But, dependency on information technology can cripple an organization or activity if fail-safe and counter measures are not instituted and practiced.

Electronic supply chain infrastructures are using revolutionary information technology to assist managers by capturing and tracking complex data more effectively through online data exchange. By using this technology to their advantage, private organizations transform business practices to become more efficient, effective, and productive. Because of this

advantage, customer service relationships within organizations have improved. Electronic supply chain concepts are suitable for DOD application.

To empower U.S. forces through the network, Assistant Secretary of Defense John Stenbit urges us to “move power to the edge.” The “edge” does not mean the guy in the foxhole. Rather, it refers to anyone who urgently needs information anywhere on the network. To leverage information technology and harness the power that networks offer, three things should be accomplished: (1) make information available on a network that people trust; (2) populate the network with new and useful information that pulls the best resources, rather than pushing it from a central location; and (3) deny the enemy from access to the network.<sup>4</sup>

Organizations can move beyond a narrow-minded view of their processes by viewing themselves within the context of larger missions and goals through intelligent application of information technology. New information technologies can eliminate duplicative data entry and provide real-time situational awareness. The ability to make real-time decisions on the basis of large amounts of disparate information is a complex challenge that DOD is experiencing. The application of new information technologies can help DOD become more strategically responsive to crisis and serves as a decision support tool for combatant commanders. These tools could be especially beneficial to logistics support decisions on the battlefield. Using real-time information about the status of vehicles and their condition can improve battlefield logistics by observing correlations between current situations and the outcome of past resupply decisions.<sup>5</sup>

Intelligent Information Systems (ITS) is a breakthrough technology that could meet the real time information needs of battlefield logistics. Proven for large-scale, real-time critical problems, this technology is widely recognized by commercial industry as a solution of choice. The Military Traffic Management Command Transportation Engineering Agency also believes that ITS has potential benefits for the DOD. This system collects, stores, processes, and distributes information relating to the movement of people and goods.<sup>6</sup> ITS provides a technological solution to the problem of growing congestion on U.S. roadways. Some of the functions performed by this automated information system that the DOD can use include intelligent information concerning the national transportation infrastructures and intransit visibility over shipments. This automated information system can also help shippers avoid congestion on roadways, at ports, and at railheads. Additionally, this automated information system can help improve the DOD supply distribution system by fusing shipments from multiple supply sources into a shared database for authorized users. The application of this technology would greatly enhance the capability to direct and streamline the DOD supply distribution process.

United Parcel Service (UPS) provides a good example of how information technology has helped resolve some of their operational issues. For sixteen consecutive years, UPS has been rated America's most admired mail, package and freight delivery company by Fortune magazine.<sup>7</sup> It has grown to become the world's largest integrated package delivery company, delivering an average of 13.6 million packages a day by 1.18 million shippers to 7 million consignees.<sup>8</sup> UPS adopted state-of-the-art technology to track cargo, parcels, and other related mail packages throughout the United States. The integration of information technology into their organization provided oversight and visibility of all parcels from origin to destination.

UPS spent over eleven million dollars on information technology systems and services allowing them to compete in the digital age, and to provide the electronic connectivity and flexibility to the customer base. This investment allowed UPS to connect with customers through online shipping and tracking services, through mainframe to mainframe communications, by integrating shipping and tracking functionality into the software packages of today's leading e-commerce vendors, and through a suite of secure electronic delivery services.<sup>9</sup>

Through the World-Wide Web (WWW), more commonly referred to as the Internet or web, UPS provided customers the capability to track parcels from origin to destination, which helped ease customer concerns about their shipments. This has helped improve the level of customer satisfaction and trust, while at the same time improve service reliability. Additionally, this also reduced re-delivery costs if the customer was not available to receive the package on the first delivery attempt. When customers are able to anticipate time of delivery, they make arrangements to be available to accept the delivery.

DOD logisticians have employed a similar concept. They have utilized automated identification technology (AIT) to provide in-transit visibility of cargo to all destinations, domestic and foreign. Each time a piece of cargo reaches a location along the route to its destination, data indicating cargo location is transmitted to a server for access by authorized system users. This ability to determine accurate cargo location greatly assists combatant commands in maintaining visibility over supplies. Likewise, it provides senior leaders outside the theater the capability to assess the situation and help make decisions about what combatant commands require before they even submit requisitions back to the industrial base.

#### ELECTRONIC COMMERCE/ELECTRONIC BUSINESS (EC/EB)

Electronic Commerce (EC)/Electronic Business (EB) can assist DOD logisticians. Simply stated, E-Commerce utilizes networks and other electronic software packages/resources to conduct business, mostly web-based technologies.<sup>10</sup> This vast, ever-changing, all-

encompassing, and powerful asset enables an organization to reach its full potential. E-Commerce facilitates rapid business transactions, data information exchanges, business process engineering, organizational changes, and automation. Used properly, it can deliver information or service on demand.

As in the example of UPS, E-Commerce generated immediate benefits by reducing the number of phone calls made to its call center. Telephone calls were costing UPS more than \$2.00 per call, while web inquiries only cost ten cents. UPS marketing considered the internal cost savings just the tip of the iceberg.<sup>11</sup> In this case, web responses proved to be more timely and cost effective, thereby opening the door to new concepts and innovation.

As a result of the DOD strategy to modernize logistics systems each of the Services have adopted E-Commerce technologies. For example, the Army Electronic Commerce Strategic Plan specifically addresses the efficient and effective management and use of EC/EB technologies to gain information dominance. The plan establishes the guidance for managing EB/EC resources, objectives, and goals. EB/EC employs electronic techniques to accomplish business transactions like Electronic Data Interchange (EDI), electronic mail or messaging, electronic bulletin boards, purchase cards and electronic funds transfer. Electronic technologies and applications affect many logistics activities. The use of E-Commerce has improved the productivity of US companies.<sup>12</sup>

The WWW provides an example of how E-Commerce has changed the way private industry and the federal government transact business. This concept was originally developed by and for the government, initially designated as the Military Network (MILNET), based out of Fort Belvoir. However, during the mid-to late 90's, private industry realized the potential of this capability and decided to modify it and make it profitable. Organizations which once performed sales in person at stores world-wide or over the phone began to realize that through the internet they could reach a multitude of people in a fraction of time than before. All that was required was the software engine to place a visual on the web for the customer to view and select as a purchase. The government soon followed by using the Internet and other forms of E-Commerce to reduce the amount of paper received, processed, and stored. This includes promulgating mission-related objectives, presenting informational presentations, listing job opportunities, and processing other mission-related requirements needed to support daily operations. The World Wide Web will continue to help DOD realize greater economy and efficiency, carrying out many critical DOD functions in a paperless environment.

E-Commerce has been streamlining many processes and enabling organizations to improve efficiency and reduce costs while providing reliable, convenient, and faster services. E-

Commerce has the ability to handle extremely large volumes of transactions and the ability to analyze and control large quantities of data. E-Commerce enhances information filtering, research, retrieval, and off-line delivery. Forecasting and inventory replenishment have improved customer service and increased inventory rotations through vendor managed inventories (VMI). This process helps suppliers generate more accurate forecasts that can lead to better scheduling, timely production, and reduced operational costs.<sup>13</sup> Commercial Off The Shelf (COTS) transportation and distribution products now improve work-flow management.

EC/EB can help tie DOD logistics into a cohesive electronic business network. DELL, Hewlett Packard, Compaq, and IBM corporations provide examples of how private industry utilizes web technology to market and promote sales of their products to a targeted audience. Using fewer resources (warehouse space, sales representative, or storage facilities, etc.), they provide information related to their product or service directly to the “fingertips” of customers. DOD Acquisition Specialists can now use similar concepts for price quotes, product specifications, capabilities, comparison of prices, and other data to facilitate the decision-making process. To keep in step with commercial business practices, DOD supplies should be acquired using a state-of-the-art methodology.

However, there are shortfalls to the use of E-Commerce. First among these is security. This is nothing new to the Information Technology (IT) arena. As reliance on technology increases, organizations assume greater risks of intentional damage to IT infrastructure. The culprits are called “hackers”. Some are innocent experimenters, while others are vicious and destructive in their intent. The government is paying close attention to the breakthroughs and accomplishments of the private sector in stopping hackers from penetrating their corporate networks. The use and implementation of firewalls, data encryptions, authentication protocols, secured digital signatures or certificates, bio-technologies, and the anticipated implementation of common access cards imbedded with user personal information for LOGIN protocol and access privileges should help reduce these threats. But for now we must acknowledge these risks and do all we can to secure EC/EB technologies.

## SYSTEM INTEGRATION

DOD logisticians should consider Horizontal Technology Integration (HTI) to help integrate logistics systems. Stovepipes exist among DOD customers and partners because of paper-based and batch-processed transactions which do not capitalize on today’s best practices and technologies. Between \$1.5B and \$2.5B is spent annually to support systems that are susceptible to errors and delays and that do not adequately support today’s lethal, agile defense

forces.<sup>14</sup> HTI integrates common technology across multiple systems platforms and eliminates the stovepipes or fragmented systems that already exist within DOD. HTI may be acquired through sharing development overhead costs rather than pursuing separate development efforts. HTI savings may also be realized by using common parts after a system is fielded.

With the acceleration and development of logistics electronic integration within the Services and Defense Logistics Agency, integrated solutions to complex information requirements across DOD are being realized. Shared knowledge and collaborative solutions are encouraged through policy oversight initiatives. These initiatives are designed to acquire software that will support participants by creating the desired end state, which includes highly skilled and trained people within the DOD logistics enterprise.

## **PARTNERING AND COLLABORATION**

DOD logisticians can improve current and future logistical requirements of the soldier by partnership and collaboration with industry. The most important, fluid, and elusive asset of the DOD enterprise is information about what is going on in the commercial sector. Collectively, information assets must be superior to those of potential adversaries, and information systems must guarantee dominant knowledge in business and operational areas. Information must be shared with people of like disciplines or interest so they can make informed decisions. Simply collecting data is not sufficient. Synergistic sharing can be achieved through partnerships forged between the DOD and the commercial sector.

Partnering with the commercial sector fosters team-building, which in turn helps define common goals, improve communication, and generate a problem-solving attitude among a group who must work together throughout the performance of a mission. Further, the longer the relationship exists between the DOD and the commercial sector, the greater both parties benefit from the investments in their relationship and the products that are created from this joint venture. Partnering establishes a cooperative effort and eliminates adversarial posturing between DOD and industry. It also draws on the strengths of each organization to achieve the best quality product the first time, on time despite budgetary constraints.

Collaboration is similar to partnership. Just as with partnering, companies form an alliance with the DOD to share information and work together. In any case, both may need similar or existing technology to produce or reach a mutually shared vision, goal, or objective. The key to their success resides in their cooperation to work towards this end. Each organization has a piece of the puzzle required to produce the desired result, and only by working together can they achieve this objective. In most instances, efficiency results from this

kind of partnership. However, there are instances where the inherent attitude and protocols of commercial companies and the DOD create obstacles that prevent the partnership from reaching full participation and potential.

In some “ventures” the efficiency of operations or the economies of scale leads to permanent relationships, sometimes fostering corporate mergers. Collaborative use of technology with Microsoft assisted in the government’s integration of Commercial Off The Shelf (COTS) products with existing requirements to produce the Defense Message System (DMS). Although this system required additional refinement to eliminate some inherent flaws in its design and functionality, it was indeed achieved through a working relationship with an existing organization to produce a product to resolve a need.

To attract companies into partnerships with the government, DOD should seek technological innovations such as new business models. COTS vendors provide products that are components of a system, rather than the entire system. To promote such building of systems, DOD and industry should jointly determine the replaceable parts and pieces offered by various suppliers while protecting each company’s proprietary rights. Indeed, a third party might be needed to perform the integration to validate the capabilities of components and services. Of course, organizations must share mutual trust as they work to achieve a common primary objective.

The National Defense Industrial Association’s (NDIA) role, as a defense enterprise asset, is to represent the defense industrial base and address legislative, regulatory, and policy issues that govern the business relationship between DOD and the Association members. NDIA supports efficient business practices that reduce costs to expand commercial technology and preserve domestic, defense-unique, core-competencies and capabilities.<sup>15</sup> As a result, NDIA advocates the interests of the information technology affiliates, defense-industrial partnership, divisions, and committees. NDIA recommends that the DOD modernize programs, policies, and business practices with emphasis on information.

After the Persian Gulf War, DOD transportation leaders partnered and collaborated with the independent shippers/carriers to ensure their future transportation requirements could be met by means of the Voluntary Intermodal Sealift Agreement (VISA) and the Civil Reserve Fleet (CRAFT).<sup>16</sup> This agreement provides profits for the carriers to transport cargo to specified locations, while the DOD transporter no longer has to negotiate rates to ship the goods to the theater of operations. Further, DOD can now concentrate on supporting other mission critical requirements. This partnership benefits the carriers because their old technology will be upgraded by the DOD, giving them better hardware with new platforms, such as secured

telephones, new PC's, and Integrated Services Digital Network (ISDN) communication linkages for data transmission.

Similarly, the Air Mobility Command (AMC), the Military Traffic Management Command (MTMC), and the Military Sealift Command (MSC) have entered into a partnership to meet transportation needs of the DOD for peace and wartime missions. Although each specializes in a specific area (air, land, and sea movements), they all work together to meet the needs of transporting cargo, troops, and equipment to a desired location using the resources available to them. These same agencies also partner with private industry to accomplish this objective. While private industry sees an opportunity for profit and to fully utilize their resources, the DOD agency meets the requirements placed on them to support the theater of operations in a timely manner. Another example is how the DOD worked closely with the automobile engineers and manufacturers to produce the high mobility multi-wheeled vehicle (HMMWV) to operate effectively over any terrain the soldier may have to traverse. The HMMWV appeal was so great that the public now wants to purchase these vehicles for their own personal use.<sup>17</sup> This unexpected demand benefits the government by lowering the cost of acquiring these vehicles.

## **BEST PRACTICES**

The DOD logistics process incorporates commercial practices and relies on commercial providers to take advantage of technologies and advanced methods being created in that sector. Although commercial products and capabilities are the principal source of commodity and services support, the Department continues to perform its core functions and capabilities.<sup>18</sup>

—FY 2000 DOD Logistics Strategic Plan, Aug 1999

Another success story from private industry that the DOD logistician could benefit from is the use and implementation of best practices. Over the past decade, the commercial sector has recognized, restructured, and adopted a revolutionary new business and management practice to enhance its competitive edge in the fast-changing global market.<sup>19</sup> Best practices enable leading-edge organizations to deliver world-class standards of performance to their customers. In private industry, “commercial enterprises practices” refers to methodologies and applications that set a commercial enterprise above competition.<sup>20</sup>

Similarly, the DOD logistics community has been challenged to seek new strategies to improve its methods. With DOD downsizing, they are constantly being asked to do more with less. As a result, the logistics community has shown an increased interest in commercial business practices. As an element of DOD transformation, the Revolution of Military Logistics

(RML), the directive could be accelerated greatly by investigating and embracing many commercial business practices. DOD literature frequently advocates leveraging commercial business practices. Likewise, leveraging is often cited in presentations concerning the military of the future, RML, and AAN. Industry's changing view of logistics has been a catalyst for integrated supply management. Some useful examples to achieve RML using industry's business practices are: e-commerce, automated identification technology, direct vendor and delivery, load optimization, outsourcing, and smart design.<sup>21</sup>

## **PRIME VENDORS**

The DOD utilizes prime vendors to improve velocity within the supply chain, reduce inventory, and adopt a business approach to logistics. Prime vendors support DOD outsourcing requirements. Prime vendors perform increasing numbers of secondary functions in support of DOD operations, which allow DOD logisticians to focus on core competencies and mission execution. Efficient organizational structures are aligned with cost-effective, streamlined business processes supported by linked information systems and resources. Prime vendor processing enhances DOD's ability to take advantage of the private sector's distribution capabilities and electronic data processing to supply DOD customers.<sup>22</sup> The prime vendor buys inventory from a variety of sources (suppliers) and stores the inventory in commercial warehouses. The customer then orders the supplies from the prime vendor, using the electronic ordering systems. The supplier then ships directly to the DOD component or to the geographic area. This process reduces customer delivery time. Also, using the private sector's storage system reduces inventories and associated warehouse and redistribution costs for the DOD.

Prime vendors provide additional benefits to the DOD. They reduce the DOD overhead cost and provide non-DOD core competencies. They provide opportunities to access business experts at no cost. It is imperative for DOD to employ cost-effective support and sustainment strategies. Now DOD encourages acquisition programs to maximize the use of contractor resources in support of new and sustained legacy systems. Indeed, many of the challenges programs face in developing successful broad scope and long-term support and sustainment contracting derive from the advantages to the government in letting long-term and broad scope contracts. This gives the private sector greater responsibility for national defense. But the greatest burden of responsibility obviously falls on DOD's shoulders. Indeed, there are risks of loss of control and limited access associated with this increasing delegation of logistics responsibilities.

## SUPPLY CHAIN MANAGEMENT

Private sector companies have developed innovative best business practices that offer the Department of Defense opportunities for making significant improvements to the department's business operations. Some of the most successful improvement efforts in the private sector include a combination of integrated practices focused on the entire logistics pipeline. This approach is known as the supply chain management.<sup>23</sup>

Supply Chain Management (SCM) is another practice that the private sector has successfully mastered to enhance the workflow process. DOD logisticians should also adopt this practice. Supply chain management solutions have been integrated throughout some enterprises by means of a holistic, end-to-end approach. Supply chain management has been defined by the Massachusetts Institute of Technology researchers as a process-oriented, integrated approach to procuring, producing, and delivering products and services to customers.<sup>24</sup>

Supply chain management involves all activities associated with moving goods from the raw material stage all the way through to the end user or customer. This supply chain process is made up of manufacturers and suppliers who provide parts to make a particular product. It includes procurement, production scheduling, order processing, inventory control, distribution, storage, and customer service. The supply chain coordinates and integrates all of these activities into a seamless process. The supply chain process links partners such as departments, vendors, third party companies, and information systems. Basically, the supply chain is a sequence of events intended to satisfy a customer.

An important competitive advantage for managing the supply chain is the implementation of software that integrates many different processes. Included in these processes are supply and demand planning, transportation and distribution management, and advanced planning and scheduling for asset management or manufacturing operations. This approach has led to reductions in inventory, increased on-time deliveries, reduced total product cycles times, increased revenues, and provided better customer service. According to the GAO, Sears has an excellent supply chain management program. The Sears program includes placing individual logistic pipeline functions under a single supply chain manager providing for a centralized system for inventory and shipment oversight.<sup>25</sup>

Sears has automated and interfaced their supply chain functions to electronically process data within and across all business operations. With this capability, Sears can require vendors

to provide inventory information via electronic data interchange (EDI). By using a multi-tiered combination of supply practices, Sears is able to maintain an accurate and complete inventory, including defining vendor requirements through contractual arrangements and enforcing compliance by assessing vendors prescribed penalty fees for inaccuracies.<sup>26</sup>

Communication has been essential to synchronizing the supply chain management process. System-wide connectivity, near real-time process monitoring and dynamic planning control is achieved through the collaboration and integration of supply chain partners. Due to increasing demands for quality, speed, and delivery, integrated supply chain management is a proven business strategy that has gained wide acceptance in recent years.<sup>27</sup> The emergence of the integrated supply approach has been supported by new and radical ways of communicating, yielding cost reductions and more independent supplies, providers, and customer relations.

A growing revolution in corporate-wide logistics management is being accomplished through applying integrated, tailored enterprise-wide business process management software suites to implement supply chain management techniques. These products automate and streamline supply chain business processes. Two innovative processes now widely used are automated payments based on delivery and real-time communication between supply chain partners.

#### **FUTURE LOGISTICS ENTERPRISE**

The Future Logistics Enterprise (FLE) is just one example of how DOD plans to enhance support to the warfighter, accelerate logistics improvement, and align logistics processes with the operational demands of the twenty-first century. The FLE is the DOD strategic program to implement new national-level best commercial business practices that parallels the Services and Chairman, Joint Chief of Staff long range programs. The FLE is an integrated set of six collaborative initiatives to achieve end-to-end customer service within the Department of Defense logistics operations.<sup>28</sup> This new DOD initiative is transforming the logistics community to embrace the concept of the Objective Force with initial operating capability expected in FY 2008. The objective of FLE is to ensure reliable and consistent support to meet warfighters' requirements. This objective should be obtained through end-to-end customer service and enterprise integration.<sup>29</sup> Specific and ongoing Service/Agency initiatives to meet requirements of the Quadrennial Defense Review and the National Defense Strategy have been set forth in FLE.

FLE will help DOD achieve success similar to those achieved by commercial businesses. Through networking, business enterprises have become more strategically aligned. They have

replaced individual companies because competition has shifted to specific market opportunities. These opportunities are made possible through electronic commerce technologies and by exploiting global near-time communications. The Internet provides a means to move and retrieve information to and from virtually any site in the world, thereby creating a virtual office.

## **END-TO-END DISTRIBUTION**

End-To-End Distribution is another commercial business practice that DOD logisticians could leverage to resolve some of their logistical shortfalls. The End-To-End Distribution initiative designed to streamline warfighter support by providing materiel, including retrograde and associated information, from source to supply origin or point of origin to the point of use or disposal, as defined by the combatant commander, military service, or characteristics of the commodity, on a worldwide basis.<sup>30</sup> The intent of the initiative is to influence acquisition, sourcing, positioning, and transportation to facilitate the flow of materiel to the end user, ensuring that deployment and sustainment are synchronized. Distribution includes the process of supplying goods, receiving, stocking, storing, picking, packaging, issuing, and transporting materiel. It also includes synchronizing all elements of the logistics system to deliver to the 'right place' at the 'right time' to support the geographic combatant commander.<sup>31</sup>

End-To-End Distribution creates an environment in which activities associated with the transportation and flow of supplies and related information flow is unified from one source to consumption. Current distribution processes are fragmented and supported by numerous information systems that are not synchronized.

Presently, the DOD distribution environment consists of unsynchronized segments and distribution nodes, with rescheduling often required at each change of transportation node. DOD employs a myriad of discrete supply chains, but they are not harmonized at the enterprise level. This distribution environment places a heavy materiel-tracking burden on the customer, who usually lacks complete information and end-to-end visibility. This often creates unnecessary uncertainty and workloads at the point of receipt. When the point of receipt is an austere area of conflict, this situation can become especially critical.<sup>32</sup>

Distribution providers try to optimize their function by reducing cost, decreasing customer wait times, and minimizing handling. Even when the amount of time an item spends in any given supply segment is minimal, the end-to-end movement from source to the ultimate customer is often unacceptable. Warfighters must have confidence in the distribution process

and this can be achieved only if the supply providers, DLA, military service commands, and Executive Agents integrate and synchronize information systems with end-to-end processes.

## **BUYING SERVICES AND NOT PRODUCTS**

DOD sources products, services, and providers competitively. Warfighting requirements are satisfied directly by using 'best value' logistics providers. The logistics process selects the method of support from organic and commercial providers that assures the correct quantities, proper product, service quality, and timely delivery of service and product.<sup>33</sup>

Buying services and not products is another strategy from the private sector which could assist the DOD. Application Service Providers (ASP) is a rapidly growing industry. ASP commonly uses COTS business applications. ASP provides and maintains software on a server, then users pay for access to that software without committing funds to license, host, and support their operation. Potential advantages of ASP include expert advice about application packages and the marketplace, economies of scale due to the number of users the ASP can support, and rapid ASP support services. This reduces the number of Information Technology staff the user requires.

Hewlett Packard, Dell and other corporations provide this capability to organizations in response to server consolidation initiatives as well as other organizational requirements. This solution to their customer requirements frees up the infrastructure required to "house" the servers and application software within the organization. The reason some organizations tend to utilize this server is because they do not have the time or resources required to establish a working environment. Also, they may lack resources required to maintain this environment.

Costs may be high, but this solution addresses immediate needs and requires no commitment of resources on their part to ensure data integrity or security. The ASP is responsible for data backups and recovery processes and the associated personnel required to support these solutions. This frees the organization to focus on its primary task and not worry about the IT support required to support this endeavor. ASP usage in such domains as offices, business applications, and logistics can be advantageous where there is a ready market for applications that involve single products or integrated sets.

## CONCLUSION

The RML earmarked the era for change and was the driving force behind transforming, modernizing, and streamlining DOD logistics. The success of the Gulf War, reduction of the peer competitor threat, and cut in the defense budget has forced the logistics community to modernize and transform. The decline of the defense budget, in particular has caused a major shift and reduction in the force structure. Consequently, the logistics footprint that supported the large military force must be amended.

The FY 2000 DOD Logistics Strategic Plan was the road map that forced the logistics community to view logistics through new lenses and gain new perspective about how to meet the requirements of the RML. The DOD logistics community realized that although logisticians were successful in moving and supplying the force during the 1991 Gulf War, although, not without challenges, it could no longer sustain the force in the same manner as it did previously. However, if you would ask the logisticians who supported the 2003 War in Iraq, some would claim that we have not learned many lessons from the previous Gulf War. Recent news reports highlighting the logistics support in the War in Iraq appear to support this assessment.<sup>34</sup> To gain more efficiency and to provide more effective sustainment there is a need to leverage new or pre-existing technologies and concepts to transform into the 21<sup>st</sup> century.

The DOD logistics systems and practices that were once state-of-the-art are now antiquated when compared to private sector systems and best business practices. DOD has labored under logistics systems and business practices that are a generation behind modern corporate America. While it appears that DOD logistics is taking advantage of the many benefits that industry has to offer such as technology, partnering and collaborating, best practices and prime vendors, supply chain management, and end-to-end distribution, such initiatives have not been successfully implemented and are not expected to be implemented across DOD until 2006. This trend cannot continue.

However, a small portion of the DOD logistics community has taken advantage of industry capabilities. For example, the Defense Logistics Agency has taken advantage of the technological breakthroughs in the supply chain management arena with some success. Nevertheless, we still trail behind our industry partners in synchronizing and integrating our DOD logistics databases, which would allow us to communicate across a common architecture and view the pipeline through a single lens. It will be difficult to modernize, transform or become efficient in the manner that the strategic plan was designed until we can overcome such obstacles. We must be consistent with our timelines and approach leveraging industry aggressively. The warfighter will not wait for the logistics community to playcatchup.

The 21st century demands and the current security environment require DOD to leverage opportunities provided by technologies to build a logistics community that is just as lean, efficient, and responsive as the commercial sector. More collaboration among the government and industry is one way to achieve greater benefits for the DOD. Industry wants to increase profit, and the government wants to acquire faster and cheaper capabilities.

This SRP offers some potential solutions to the problems faced by DOD in this rapidly changing and dynamic environment. Leveraging industry to enhance DOD logistics through technology, collaboration, best practices, prime vendors, supply chain management, End-To-End Distribution, and buying services and not products will enable the DOD to move confidently into the twenty-first century, better prepared to support warfighters. As with all projections, one cannot predict the future. But preparing today can help facilitate future needs for DOD logistics programs, products, and services.

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## ENDNOTES

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<sup>2</sup> Department of Defense, Assessing Defense Industrial Capabilities Department of Defense Handbook 5000.60-H (Washington, D.C.: U.S. Department of Defense, 25 April 1996), 5.

<sup>3</sup> Department of Defense, Defense Reform Initiative (Washington D.C.: U.S. General Accounting Office, 1999), 1.

<sup>4</sup> Paul Wolfowitz, "Prepared Statement for Senate Armed Services Committee Hearing on Military Transformation," 9 April 2002; available from <http://www.au.af.mil/au/awc/awcgate/dod/transformation-wolfowitz-9apr02.htm>; Internet; accessed 26 February 2003, 5

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<sup>6</sup> Military Traffic Management Command Transportation Engineering Agency. Integration of Intelligent Transportation Systems (ITS) into DOD Operations. 3. June 2001. 6-7.

<sup>7</sup> William R. Boulton. United Parcel Service: Moving at the Speed of Business. (Phoenix, Arizona: USW Building Services), 1999,8.

<sup>8</sup> Jeanne W. Ross, Case Study: United Parcel Service: Delivering Packages and E-Commerce Solutions (Cambridge, MA: Massachusetts Institute of Technology Sloan School of Management, March 2001), 1.

<sup>9</sup> Boulton, 8.

<sup>10</sup> Office of the Army Chief Information Officer/G-6, "Major Projects: Electronic Business/Electronic Commerce," last modified June 2002; available from [http://www.army.mil/ciog6/majorprojects/eBus\\_eCom.htm](http://www.army.mil/ciog6/majorprojects/eBus_eCom.htm); Internet; accessed 26 February 2003,1.

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<sup>12</sup> Larry Smith, "Commercial Logistics Best Practices for the Revolution in Military Logistics," Army Logistician (January-February 1999): 33.

<sup>13</sup> Ibid., 34.

<sup>14</sup> Lou Kratz, "Future Logistics Enterprise." Logistics Spectrum 36 (July-September 2002), 28.

<sup>15</sup> National Defense Industrial Association, NDIA Top Issues for 2002: The Voice of the Industrial Base, 2001; available from <http://www.ndia.org/advocacy/pdf/TopIssues2002.pdf>; Internet; accessed 26 February 2003, 9.

<sup>16</sup> Charles T. Robertson, Jr., Understanding the Defense Transportation System (Scott Air Force Base, IL: U.S. Transportation Command, 1 September 2002), 2-3.

<sup>17</sup> David Welch and Sheridan Prasso, eds., "Hasta La Vista, Hummer," Business Week, no. 3804 (21 October 2001): 14

<sup>18</sup> Office of the Deputy Under Secretary of Defense for Logistics, 7.

<sup>19</sup> Department of Defense, Defense Reform Initiative, 1.

<sup>20</sup> Smith, 1.

<sup>21</sup> *Ibid.*, 1.

<sup>22</sup> Department of Defense, Defense Reform Initiative, 8.

<sup>23</sup> Vincent J. Chase, "Subcommittee on National Security, Veterans Affairs, and International Relations" press release for June 25, 2002 hearing, 19 June 2002; available from [http://reform.house.gov/ns/schedule\\_107th\\_2nd\\_session/june\\_19\\_briefing\\_memo.htm](http://reform.house.gov/ns/schedule_107th_2nd_session/june_19_briefing_memo.htm); Internet; accessed 26 February 2003, 10.

<sup>24</sup> Smith, 33.

<sup>25</sup> Chase, 10.

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<sup>27</sup> Office of the Secretary of Defense, Integrated Supply Chain Management, OSD Comptroller Center, 1.

<sup>28</sup> Diane K. Morales, Future Logistics Enterprise: The Way Ahead (Washington, D.C.: U.S. Department of Defense, 3 June 2002), 4.

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<sup>30</sup> Department of Defense, End to End Customer Support, (Washington D.C.: Logistics Plans and Programs), 1.

<sup>31</sup> Department of Defense, Dictionary of Military and Associated Terms, Joint Publication 1-02. (Washington: U.S. Department of Defense, 1 April 2001), 163

<sup>32</sup> Kratz, 28.

<sup>33</sup> Department of Defense, FY2000 DOD Logistics Strategic Plan, 7.

<sup>34</sup> National Public Radio Morning Edition: U.S. Military Logistics in Iraq. Reported on National Public Radio, 3 March 2003.



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